BRUHAT BANGALORE MAHANAGARA PALIKE

**NAME OF WORK:-Comprehensive Development of Roads and Drains at Kaveri Layout, AMS Layout, Aditya Nagara 1st and 2nd Stage, Doddabettahalli, Yelahanka 4th Phase and Muneshwara Layout and Surrounding Areas in Ward No-03 of Yelahanka Division.(Package No-12)**

**BILL OF QUANTITIES**

| Item No | Description of Work | Unit | Total Quantity as per Estimation | Rate as per estimate in Rs. | |
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| | | | | In Figures | In Words |
| 1 | Earthwork excavation by manual means for roads, drains & similar works in ordinary soil excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specifications complete as per specification and directions of the Engineer in charge. | Cum | 8325.89 | | |
| 2 | Removing and refixing stone slabs of drains and pointing in CM (1:3) complete as per specification and directions of the Engineer in charge. | Sqm | 1450.53 | | |
| 3 | Providing two line dressing to granite stone slab / granite stone masonry as per specifications. KBS 5.1.13 complete as per specification and directions of the Engineer in charge. | Sqm | 970.20 | | |
| 4 | Providing and laying Plain cement concrete of mix 1:3:6 with OPC @ 220kgs, with crushed 40mm and down size graded granite metal coarse aggregates @0.89cum and fine aggregates @ 0.46cum, in foundation mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days including cost of all materials, labour, HOM curing, form works, scaffolding and centering complete as per specification and directions of the Engineer in charge. | Cum | 1696.31 | | |
| 5 | Providing laying plain/ reinforced cement concrete for side Drains Using M20 nominal mix Concrete with OPC at 300kgs.With 20mm and Down size granite metal coarse aggregate at 0.69cum and fine aggregate at 0.43cum Machne mixed, well compacted for wall and Bottom including centering shuttering,cost of materials,HOM of Machinery,Curing Etc.,Complete Excluding cost of Steel as per morth MORTH specification No. 1500, 1700, 2200. Including Cost of material, Labour, HOM complete as per Specification-WALL & Bottom thickness 15Cmcomplete as per specification and directions of the Engineer in charge. | Cum | 2593.09 | | |
| 6 | Providing T.M.T bars Fe 500 steel reinforcement for R.C.C work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. MORTH Specification NO.1600&2200Specification complete as per specification and directions of the Engineer in charge. | tonne | 160.10 | | |
| 7 | Providing and Fixing pre cast covering Slab made out of CC 1:2:4 with 10cm thick and Finishing cutting ,including form work,curing,including cost of alll materials, labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc ,copmplete. (Data Rate) complete as per specification and directions of the Engineer in charge | Sqm | 5879.00 | | |
| 8 | Providing and Fixing pre cast covering Slab 250mm thick made out of CC 1:2:4 and jelly 20mm Down size with steel reinforcement including form work,curing,including cost of alll materials, labour,hire charges of machinery, loading, unloading, lead and lift,transportation etc ,complete As per Engineer incharge | Sqm | 364.47 | | |

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| 9 | Providing and laying in position plain cement concrete of Mix 1:2:4 with OPC @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregtes @ 0.53cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM curing complete as per specification and directions of the Engineer in charge. | Cum | 115.31 | | |
| 10 | Providing and fixing pre cast solid cement concrete kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting including formwork, curing, including cost of materials, labour charges of machinery, loading and unloading, lead and lift, transportation etc ,complete as per specification and directions of the Engineer in charge. | Nos | 12814.00 | | |
| 11 | Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 complete as per specification and directions of the Engineer in charge. | Sqm | 2306.16 | | |
| 12 | Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transportation with a lead of 1.00 km and complete as per specifications MORTH Specificatio MORTH Specification No.301Loading and unloading with 5km leadcomplete as per specification and directions of the Engineer in charge. | Cum | 4310.86 | | |
| 13 | Scarifying bituminous course 50mm to 75mm thick along with premix carpet / surface dressing by road roller attached with scarifier without disturbing the base and stacking the debris including cost of all labour charges, HOM of machineries complete as per specification and directions of the Engineer in charge. | Sqm | 1675.20 | | |
| 14 | Compaction of original ground by mechanical means including filling in depression occuring during rolling including cost of all labour, HOM complete as per specification and directions of the Engineer in charge. | Sqm | 11532.79 | | |
| 15 | Construction of granular sub-base Grading-V as Sub-base and drainage layer by providing coarse graded crushed stone aggregates of granite/ trap/basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98 % proctor density, complete as per specifications Clause 401 of MORTH V Revision.complete as per specification and directions of the Engineer in charge. | Cum | 1610.71 | | |
| 16 | Providing, laying, spreading and compacting cushed stone aggregates of granite / trap / basalt to wet mix macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specification and directions of the Engineer in charge. | Cum | 2383.05 | | |

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| 17 | Cleaning the existing WBM Road surface including removing of binding materials and other foreign matter with wire brushes and small picks sweeping with brooms or soft brushes and finally dusting with old gunny bags and bar or compressed air to receive bituminous treatment including cost of all materials, labhour, HOM of machineriescomplete as per specification and directions of the Engineer in charge. | Sqm | 10361.08 | | |
| 18 | Providing and applying primer coat with S.S. bitumen emulsion on prepared surface of granular base such as WMM including cleaning of road surface and spraying primer at the rate of 0.60 kg / sqm using mechanical means complete as per specifications Clause 502 of MORTH V revision complete as per specification and directions of the Engineer in charge. | Sqm | 11456.60 | | |
| 19 | Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications Clause 505 of MORTH V revisionusing 40/60 TPH capacity H.M.P. with Mechanical paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumencomplete as per specification and directions of the Engineer in charge. | Cum | 572.83 | | |
| 20 | Cleaning the existing black topped surface with brooms,soft brushes and finally dusting with old gunny bags and/or compressed air to receive bituminous treatment including cost of all materials,labhour, HOM of machineries complete as per specification and directions of the Engineer in charge. | Sqm | 14420.93 | | |
| 21 | Providing and applying tack coat using 80/100 grade bitumen(VG10) on the prepared black topped surfaces at 2.5 kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM complete as per specification and directions of the Engineer in charge. | Sqm | 14420.93 | | |
| 22 | Providing and laying bituminous concrete using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications Clause 507 of MORTH V revision using40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 5.4% VG-30 Bitumencomplete as per specification and directions of the Engineer in charge. | Cum | 510.78 | | |
| 23 | Road Marking with Hot Applied Thermoplastic Compound with Reflectrising Glass Beads on Bituminous Surface/ Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 standards specified. The finished surface to be level, uniform and free from streaks and holes complete as per specification and directions of the Engineer in charge. | Sqm | 442.78 | | |

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| 24 | Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials stacking serviceable and unserviceable materials seperately complete as per specification and directions of the Engineer in charge. | Cum | 74.43 | | |
| 25 | Cement concrete pavement.Construction of un-reinforced plain cement concrete pavement, using a grade concrete M30 over a prepared base with OPC coarse aggregate @ 0.69cum fine aggregate @ 0.46cum,coarse and fine aggregate confirming to IS:383-2016,with superplastisiser @3lts confirming to IS9103-2008mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work as per drawing). Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints including groove cutting charges, joint filler, separation membrane, selant primer, joint sealant, admixtures as approved, curing compound, finishing to lines and grades, textured with texturing machine,and curing including cost of all materials,labour,hire chargedof machines,all lead and lift charges etc., complete as per specifications. - do with OPC at 360Kg per cum coarse aggregate @ 0.69cum and fine aggregate @ 0.46cum complete as per specification and directions of the Engineer in charge. | Cum | 388.42 | | |

Executive Engineer
BBMP